POWERSAFE

VOLTAGE STABILIZER
TRANSFORMER UPS

SALES OFFICE: SUITE 2 CRISTOBAL PLACE, I.S. DIAZ STREET CORNER
CRISTOBAL SRTEET CUBAO QUEZON CITY

THREE PHASE SCR
AUTOMATIC VOLTAGE STABILIZER
GTZW-S

SCR STATIC DIGITAL VOLTAGE REGULATION

Highly efficient with exceptionally ultra fast speed of response – ideal for highly sensitive / mission critical loads and applications.

FEATURES

- **Automatic Voltage Regulation**
  Digitally controlled voltage stabilization
- **Wide Range of Power Ratings**
  Three Phase 10 to 4000 kVA
- **Choice of Input Voltage Swing Ranges**
  Input Swing - ±15%, ±20%, ±25%, ±30%, ±35%, ±40%, ±45%, or ±50%
  - customer to specify.
- **Precise Output Voltage Regulation**
  Output Voltage Accuracy ±1% to±5%
- **Solid State Design**
  Highly reliable and endurable electronic static design with no moving parts, delivering a virtually 'Maintenance Free' voltage regulation solution.

ENSURING AN EXTREMELY STABLE AC MAINS SUPPLY VOLTAGE

Suitable for most types of electrical and electronic equipment, the feature rich SCR AC Voltage Stabilizers continuously monitor the incoming supply. Should the incoming voltage rise or drop, the stabilizers will automatically control the output to ensure the voltage reaching the load equipment always remains constant at the requisite voltage.

Ultra Fast Speed of Response
SCR AC Voltage Stabilizers deliver an unsurpassable speed of response ≤ 60 ms making them ideal for highly sensitive loads.

Static / Solid State Design
SCR AC Voltage Stabilizers use solid state devices (SCRs) to select transformer taps to regulate the output. Unlike other similar solutions, by nature of their design do not require the SCRs to carry the full load, just a fraction - thereby delivering far superior reliability to similar systems found on the market. With no moving parts, they are virtually 'Maintenance Free' solutions.

Automatic Electronic Bypass
Inbuilt as standard on all models, the automatic bypass maintains power to the load and unit functionality, except regulation, in the event of a problem.

All Digital Controls
All digital microprocessor control and operation ensures **SCR** AC Voltage Stabilzsers provide the highest level of performance. The standard LCD display provides information on the operational status and loading on the stabilizer, and enables the configuration of a number system parameters for more demanding applications where customization is required.

Independent Phase Control
Independent phase voltage sensing and control to ensure the individual phase voltages remain stable - regardless of load unbalance .

Inbuilt High Overload Capability
Ideal for loads with an inherent initial high current draw on start up.

Over / Low Voltage Protection
Ability to automatically shutdown the Voltage Stabilizer in the event of the input supply voltage going outside pre-set input voltage parameters.

Automatic Bypass Protection
Transfer to internal bypass operation in the event of a problem.

Digital LCD Monitoring Panel & RS/485 Interface
Displaying real time operational status, key system readings and alarm events with RS/485 Interface ability for remote monitoring. (RS/485 is an add-on option).

ADD-ON OPTIONAL ACCESSORIES

Isolation Transformer
An isolation transformer is a transformer used to transfer electrical power from a source of alternating current (AC) power to some equipment or device while isolating the powered device from the power source, usually for safety reasons. Isolation transformers provide galvanic isolation and are used to protect against electric shock, to suppress electrical noise in sensitive device.Transformers that have a ratio of 1 to 1 between the primary and secondary windings are often used to protect secondary circuits and individuals from electrical shocks between energized conductors and earth ground.

Outdoor Enclosure
IP54 / NEMA 3 Style Outdoor Enclosures.

Phase Failure Protection
Protection of the load in the event of phase failure.

SPD
Protection against extremely high voltage surges and transients caused by lightning induced strikes on the utility supply line.

Input & Output Protection with Manual Bypass
Input Switch / Breaker with Output Isolation and Manual Bypass facility, including integrated mechanical / electronic interlocking to prevent inadvertent mis-operation.

TECHNICAL SPECIFICATION

Input Voltage Swing Variant Options Available:

Input Swing	Output Accurancy		Available Power Ratings
	Default	Available	
± 15%	±3%	±1% to ±5%	10 ~ 200kVA
± 20%	±3%	±1% to ±5%	10 ~ 200kVA
± 15%	±3%	±1% to ±5%	250 ~ 4000kVA
± 20%	±3%	±1% to ±5%	250 ~ 4000kVA
± 25%	±3%	±3% to ±5%	10 ~ 2500kVA
± 30%	±3%	±3% to ±5%	10 ~ 2000kVA
± 40%	±3%	±3% to ±5%	10 ~ 1200kVA
± 45%	±5%	±5%	10 ~ 1200kVA
± 50%	±5%	±5%	10 ~ 1000kVA

Output Voltage: **3Phase 4Wire WYE Configuration**
380V/220V, 400/230V, 415/240V 440/254V, 460/265V, 480/277V, 208/120V, 220/128V,
3Phase 3Wire Delta Cofiguration
220, 230, 240 (*Customer to specify*)
The permissible input voltage swing is relative to the preset output voltage.

Output Voltage Accuracy: ± **3%** ***(Default)*** - adjustable from ± 1% to ±5%, *(dependent on input swing - see above)*.

Frequency: 50Hz/60Hz

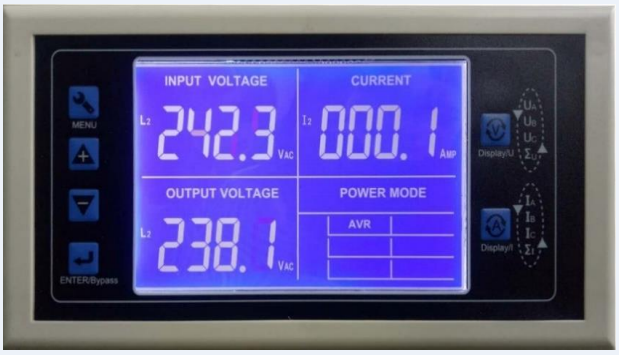
Response Time: Within 60 Milliseconds

Efficiency: ≥98%

Power Factor:	The Power Factor has no effect on performance providing the stabilizer is being used within its rated capacity.
Harmonic Distortion:	None introduced.
Independent Phase Control:	Maintains each phase voltage stable irrespective of load unbalance, even up to 100% load unbalance.
Automatic Bypass:	Automatic transfer to bypass in the event of an overload or system problem.
Start Up Protection:	Protects load equipment from damaging start up voltage surges.
Environment:	Temperature range 0 to 45 ° C. Derate by 2% for each additional ° C Up to max 60 ° C . Suitable for indoor tropical use 90% RH (non-condensing). Maximum altitude 4000m. Derate by 2.5% for each additional 500m.
Audible Noise:	< 65 dB (at 1 metre)
Construction:	Enclosures to IP20 (NEMA 1 Style) (Option - Outdoor IP54 / NEMA 3)

LCD DIGITAL DISPLAY PANEL

Comprehensive LCD Digital Monitoring and Control Panel, delivering intuitive control and monitoring of all the key system parameters.



Real Time Display of -

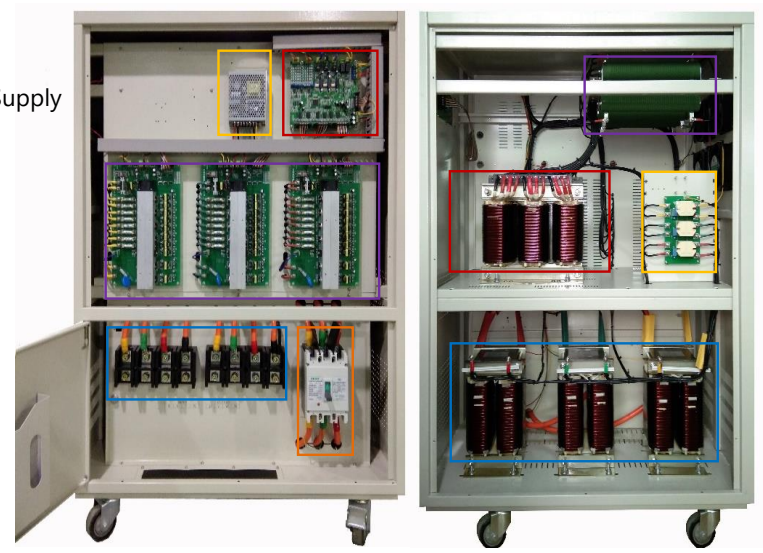
Voltage:	Individual & Average Output Phase Voltages
Current:	Individual & Average Phase Currents
Operational Status:	On AVR & On Bypass
Alarm Conditions:	Overload, Over-Voltage, Under-Voltage, Fuse Failure

Modifiable System Parameter Settings -

Output Voltage	Over - Voltage
Output Voltage Accuracy	Under - Voltage
Correction Time	Over – Current Value
Voltage Regulation Method	

SCR VOLTAGE STABILIZER INSIDE

- 1. Main Board
- 2. Switching Power Supply
- 3. SCR Driver Board
- 4. Terminal
- 5. MCCB Breaker



- 6. Regulating Transformer
- 7. Relay
- 8. Resistance
- 9. Compensating Transformer

DESIGNED SPECIFICALLY FOR TODAY'S MODERN NEEDS

Voltage Regulators are designed to stabilize the voltage when it fluctuates, up or down.

They are essential whenever reliable power is needed or when normal operation of electrical or electronic equipment is disrupted by voltage variations.

In general when suppliers of today's modern electrical and electronic equipment design their products they do so knowing that most electrical utilities around the world cannot provide or promise better than a ±5% output voltage accuracy of nominal and as such they design their equipment so it is able to operate efficiently within this range.

Our SCR Stabilizers are specifically designed to meet the requirements of today's modern loads, being feature rich and virtually maintenance free static mains control solutions.

They ensure the availability of a constant voltage at a level that always meets the design requirements of the load equipment, even for the most challenging of power environments or site loads.

Configured for optimal energy efficiency and design life expectancy, Our SCR Stabilizers are supplied by default with the output voltage accuracy set for ±3% (±5% for Input Swing ±45% ±50% Models), being easily site-adjustable to deliver a more or less precise output voltage accuracy - as considered most appropriate for a particular site's needs / available options.

SCR VOLTAGE STABILIZER TYPICAL APPLICATIONS

- Computers & Network Systems
- Medical Equipment
- Electronics Equipment
- Testing Equipment
- Laboratory Equipment
- Process Control Systems
- TV/Radio Broadcasting Stations
- Elevators / Lifts
- Audio/Video Systems
- Production Lines
- CNC Machines
- SMT Equipment

CUSTOM BUILT SOLUTIONS

With a strong and wide manufacturing base, is able to meet the requirements of customers from our own in-house professional resources.

Where bespoke / custom built solutions are required we are able to call upon our extensive portfolio of proven standard designs and tailor offerings to accommodate, without breaking the bank, most individual specific requirements.